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deposit it in the safest place I could find; the wind which was blowing from the north, had burst open the northern door, as well as the southern one immediately opposite; hence there appeared to be no other choice—than that of placing it upon the table which stood against the most secure part of the northern wall of the Observatory; here, supported by books and a green baize cover, I felt that nothing short of the building falling in, would have in the least degree endangered it; * * * * At this moment the southern doors of the observatory situated opposite to the northern wall where the transit instrument had been deposited—were literally blown to pieces; whereby one of the pieces (about eight feet by six inches by two inches) which had been blown across the room, had fallen edgewise upon the head of the micrometer attached to the transit instrument, and very neatly cut it off, without at all disturbing the other parts of the telescope. Other injuries had been sustained—by the books having been disturbed, whereby the object end of the telescope had fallen upon a pile of books from a height of about two feet, whence two slight indentations had been sustained, one on each side of the tube, at ten or twelve inches above the object end of the telescope; and the tangent screw of the setting circle had been hit; but it was evident that the axis had not in the slightest degree, been injured; a circumstance of which I have since well assured myself from observation. The first fact that struck my notice on examining the instrument was, that the focal length of the object-glass had apparently altered; or rather, that the telescope had become shorter; for, in order to render the principal focus coincident with the wires, it was necessary to remove the object-glass, 07 [*sic*] of an inch from the position it had hitherto occupied in the cell into which it was secured; this remedied (which I was enabled to do by interposing three pieces of brass of this thickness between the bottom of the cell and the frame carrying the object-glass) it only remained that the micrometer screw should be replaced;” * * * *

ARTIFICIAL EARTHQUAKE OF JANUARY 31, 1891.

On January 30 we learned, through a newspaper paragraph, that on January 31 there was to be an explosion of 3000 lbs. of dynamite in San Francisco, for the purpose of leveling a rocky hill in the suburbs. As it was possible that the shock might be detected at Mt. Hamilton, preparations were made to note the time of its arrival by Mr. SCHAEBERLE, Mr. BARNARD and myself. Mr. SCHAEBERLE observed the surface of a basin of quicksilver with the

meridian circle, and noted the times of all tremors. Mr. BARNARD directed the 12-inch equatorial on a distant mark, and did the same. I mounted a sensitive level suitably, and watched the variations of its bubble.

Professor GEORGE, at San Jose, kept a lookout on the pen of the Seismometer of the University of the Pacific. The time of the explosion in San Francisco was noted for us by two observers, through the kindness of Hon. GEORGE H. SANDERSON, Mayor of San Francisco, and of J. O'B. GUNN, Esq., of the Union Iron Works. Mr. GUNN's recorded time was $2^h 24^m 35\frac{1}{8}^s$. The explosive used was, in fact, not *dynamite* at all (as reported) but common black blasting powder, and no shock was noticed, either at San José or Mt. Hamilton. It is possible that this negative result is worth recording.

E. S. H.

MAGNETIC CONSTANTS AT MOUNT HAMILTON.

The following letter is printed by the kind permission of Professor MENDENHALL, Chief of the U. S. Coast and Geodetic Survey. The station referred to is locally known as "The Camp Ground."

The results of the magnetic observations made on the summit of Mt. Hamilton and to the eastward of the Observatory, in latitude $37^{\circ} 20' 30''$ and in longitude $121^{\circ} 38' 16''$ W., are as follows:

1888. Oct. 28, 29, 30. Declination $15^{\circ} 50'.4$ East
" " " Dip $61^{\circ} 52'.1$
Horizontal intensity 5.580 English Units, or 0.2573 dyne.
Total intensity, 11.836 English Units, or 0.5457 dyne.

The observations were made by R. A. MARR, late Assistant Coast and Geodetic Survey.

[Signed]

C. A. SCHOTT,

Assistant in charge Computing Division.

COMPUTING DIVISION, COAST AND GEODETIC SURVEY,
WASHINGTON, D. C., January 26, 1891.

WHO DISCOVERED THE OPTICAL PROPERTIES OF LENSES?

PACIFIC CHEMICAL WORKS, 718 MONTGOMERY ST., }
SAN FRANCISCO, October 27, 1890. }

PROF. E. S. HOLDEN, Mt. Hamilton.

DEAR SIR: I am in receipt of your letter dated October 15th, and at your request have copied the whole of Chapter XXVI, containing the reference to HOSTIUS, the ancient optician.* Thinking that Chapter LI might interest you, I have had that copied also.

* Which Professor HANKS was the first to find and to which he had called my attention.